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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-20 (cancelled)

21. (currrently amended) A method for anastomosis of an open end of a graft vessel to a side of a receiving vessel, the method comprising:

positioning an anvil within a lumen of a receiving vessel at an anastomosis site of the receiving vessel, wherein the anastomosis site is located at a side of the receiving vessel,

manipulating the anvil via a component extending from the anvil to cause a region of a wall of the receiving vessel at the anastomosis site to stretch and to conform to the shape of a portion of the anvil contacting the wall of the receiving vessel, wherein the component extends through the wall of the receiving vessel,

joining a graft vessel to the side of the receiving vessel at the anastomosis site,

forming an anastomosis opening in the wall of the receiving vessel at the anastomosis site, wherein the anastomosis opening is distinct from an opening used to achieve the introduction of the anvil into the lumen of the receiving vessel, and

removing the anvil from the anastomosis site, after the graft vessel has been joined to the side of the receiving vessel and the opening has been formed in the receiving vessel,

wherein the receiving vessel is a blood vessel, and wherein the anastomosis opening is formed without requiring interruption of blood flow through the receiving vessel at the anastomosis site.

22. (previously added) A method as recited in claim 21, wherein the anastomosis opening in the wall of the receiving vessel is formed after the graft vessel and the receiving vessel are joined together.

23. (previously added) A method as recited in claim 21, wherein the anastomosis opening in the wall of the receiving vessel is formed before the graft vessel and the receiving vessel are joined together.

24. (previously added) A method as recited in claim 21, wherein forming the anastomosis opening in the wall of the receiving vessel occurs simultaneously with joining a graft vessel to the side of the receiving vessel at the anastomosis site.

25. (previously added) A method as recited in claim 21, wherein the region of the wall of the receiving vessel at the anastomosis site stretches and conforms to the shape of the portion of the anvil contacting the wall of the receiving vessel by forcing the

portion of the anvil contacting the wall of the receiving vessel against the region of the wall.

26. (currrently amended) A method as recited in claim 21, wherein a part of the region of the wall of the receiving vessel caused to stretch and to conform to the shape of the portion of the anvil contacting the wall of the receiving vessel extends into an opening of a component of ~~the~~ an extravascular device prior to forming the anastomosis opening and remains in the opening of the component of the extravascular device as the graft vessel is joined to the side of the receiving vessel.

27. (previously added) A method as recited in claim 21, wherein a part of the region of the wall of the receiving vessel caused to stretch and to conform to the shape of the portion of the anvil contacting the wall of the receiving vessel is drawn into the lumen of the graft vessel prior to joining the graft vessel to the side of the receiving vessel and prior to forming the anastomosis opening, and wherein the part remains in the lumen as the graft vessel is joined to the side of the receiving vessel.

28. (previously added) A method as recited in claim 21, wherein the component extending from the anvil extends through the wall of the receiving vessel, before forming the anastomosis opening, in a configuration which permits the region of the wall to be caused to stretch and to conform to the shape of a portion of the anvil contacting the wall of the vessel without the anvil simultaneously passing through the wall of the receiving vessel.

29. (previously added) A method as recited in claim 21, wherein the portion of the anvil contacting the region of the wall of the receiving vessel is convex.

30. (previously added) A method as recited in claim 21, wherein the component extending from the anvil is a piercing wire.

31. (previously added) A method as recited in claim 21, wherein the component extending from the anvil is a positioning stem.

32. (previously added) A method as recited in claim 21, wherein joining a graft vessel to the side of the receiving vessel at the anastomosis site is achieved by driving staples through the graft vessel and the receiving vessel and against the anvil.

33. (previously added) A method as recited in claim 32, wherein the staples are driven such that a first staple is driven against the anvil and a second staple is simultaneously driven against the anvil directly opposite from the first staple.

34. (previously added) A method as recited in claim 21, wherein the anvil is removed via the opening used to achieve the introduction of the anvil into the lumen of the receiving vessel.

35. (cancelled) A method as recited in claim 21, wherein the receiving vessel is a blood vessel, and wherein the anastomosis opening is formed without substantially blocking blood flow through the receiving vessel.

36. (previously added) A method as recited in claim 21, wherein the receiving vessel remains pressurized as the graft vessel and the receiving vessel are anastomosed together.

37. (currrently amended) A method for anastomosis of an open end of a graft vessel to a side of a receiving vessel, the method comprising:

advancing an anvil inside and along a segment of a receiving vessel from an insertion site to an anastomosis site, wherein the anastomosis site is located at a side of the receiving vessel,

manipulating the anvil via a component extending from the anvil to cause a region of a wall of the receiving vessel at the anastomosis site to stretch and to conform to the shape of a portion of the anvil contacting the wall of the receiving vessel, wherein the component extends through the wall of the receiving vessel,

joining a graft vessel to the side of the receiving vessel at the anastomosis site,

forming an anastomosis opening in the wall of the receiving vessel at the anastomosis site, and

removing the anvil from the anastomosis site after the graft vessel has been joined to the side of the receiving vessel and the opening has been formed in the receiving vessel.

wherein the receiving vessel is a blood vessel, and wherein the anastomosis opening is formed without requiring interruption of blood flow through the receiving vessel at the anastomosis site.

38. (previously added) A method as recited in claim 37, wherein the anastomosis opening in the wall of the receiving vessel is formed after the graft vessel and the receiving vessel are joined together.

39. (previously added) A method as recited in claim 37, wherein the anastomosis opening in the wall of the receiving vessel is formed before the graft vessel and the receiving vessel are joined together.

40. (previously added) A method as recited in claim 37, wherein forming the anastomosis opening in the wall of the receiving vessel occurs simultaneously with joining a graft vessel to the side of the receiving vessel at the anastomosis site.

41. (previously added) A method as recited in claim 37, wherein the region of the wall of the receiving vessel at the anastomosis site stretches and conforms to the shape of the portion of the anvil contacting the wall of the receiving vessel by forcing the portion of the anvil contacting the wall of the receiving vessel against the region of the wall.

42. (previously added) A method as recited in claim 37, wherein a part of the region of the wall of the receiving vessel caused to stretch and to conform to the shape of the portion of the anvil contacting the wall of the receiving vessel extends into an opening of a component of an extravascular device prior to forming the anastomosis opening and remains in the opening of the component of the extravascular device as the graft vessel is joined to the side of the receiving vessel.

43. (previously added) A method as recited in claim 37, wherein a part of the region of the wall of the receiving vessel caused to stretch and to conform to the shape of the portion of the anvil contacting the wall of the receiving vessel is drawn into the lumen of the graft vessel prior to joining the graft vessel to the side of the receiving vessel and prior to forming the anastomosis opening, and wherein the part remains in the lumen as the graft vessel is joined to the side of the receiving vessel.

44. (previously added) A method as recited in claim 37, wherein the component extending from the anvil extends through the wall of the receiving vessel, before forming the anastomosis opening, in a configuration which permits the region of the wall to be caused to stretch and to conform to the shape of a portion of the anvil contacting the wall of the vessel without the anvil simultaneously passing through the wall of the receiving vessel.

45. (previously added) A method as recited in claim 37, wherein the portion of the anvil contacting the region of the wall of the receiving vessel is convex.

46. (previously added) A method as recited in claim 37, wherein the component extending from the anvil is a piercing wire.

47. (previously added) A method as recited in claim 37, wherein the component extending from the anvil is a positioning stem.

48. (previously added) A method as recited in claim 37, wherein joining a graft vessel to the side of the receiving vessel at the anastomosis site is achieved by driving staples through the graft vessel and the receiving vessel and against the anvil.

49. (previously added) A method as recited in claim 48, wherein the staples are driven such that a first staple is driven against the anvil and a second staple is simultaneously driven against the anvil directly opposite from the first staple.

50. (previously added) A method as recited in claim 37, wherein the anvil is removed via an opening used to achieve the introduction of the anvil into the receiving vessel.

51. (cancelled) A method as recited in claim 37, wherein the receiving vessel is a blood vessel, and wherein the anastomosis opening is formed without substantially blocking blood flow through the receiving vessel.

52. (previously added) A method as recited in claim 37, wherein the receiving vessel remains pressurized as the graft vessel and the receiving vessel are anastomosed together.

53. (previously added) A method for anastomosis of a graft vessel to a side of a receiving vessel, the method comprising:

positioning an anvil within a lumen of a receiving vessel at an anastomosis site of the receiving vessel, wherein the anastomosis site is located at a side of the receiving vessel, wherein a component extends from the anvil, and wherein the component extends through the wall of the receiving vessel,

holding a portion of the wall of the receiving vessel at the anastomosis site between the anvil and a component of an extravascular device while causing a region of the wall to conform to the shape of a portion of the anvil contacting the region such that at least part of the region extends beyond the portion of the wall held between the anvil and the component of the extravascular device, wherein the component of the extravascular device is positioned outside of a graft vessel lumen,

joining a graft vessel to the side of the receiving vessel at the anastomosis site,

forming an anastomosis opening in the side of the receiving vessel at the anastomosis site, and

removing the anvil from the anastomosis site after the graft vessel has been joined to the side of the receiving vessel and the opening has been formed in the receiving vessel.

54. (previously added) A method as recited in claim 53, wherein the anastomosis opening in the wall of the receiving vessel is formed after the graft vessel and the receiving vessel are joined together.

55. (previously added) A method as recited in claim 53, wherein the anastomosis opening in the wall of the receiving vessel is formed before the graft vessel and the receiving vessel are joined together.

56. (previously added) A method as recited in claim 53, wherein forming an anastomosis opening occurs simultaneously with joining the graft vessel to the side of the receiving vessel at the anastomosis site.

57. (previously added) A method as recited in claim 53, wherein the region of the wall of the receiving vessel at the anastomosis site conforms to the shape of the portion of the anvil contacting the wall of the receiving vessel by forcing the portion of the anvil contacting the wall of the receiving vessel against the region of the wall.

58. (previously added) A method as recited in claim 53, wherein the part of the region of the wall of the receiving vessel extending beyond the portion of the wall

held between the anvil and the component of the extravascular device also extends into an opening of the component of the extravascular device prior to forming the anastomosis opening and remains in the opening of the component of the extravascular device as the graft vessel is joined to the side of the receiving vessel.

59. (previously added) A method as recited in claim 53, wherein the part of the region extending beyond the portion of the wall held between the anvil and the component of the extravascular device also extends into the lumen of the graft vessel prior to joining the graft vessel to the side of the receiving vessel and prior to forming the anastomosis opening, and wherein the part remains in the lumen as the graft vessel is joined to the side of the receiving vessel.

60. (previously added) A method as recited in claim 53, wherein the component extending from the anvil extends through the wall of the receiving vessel, before forming the anastomosis opening, in a configuration which permits the region of the wall to be caused to conform to the shape of the portion of the anvil contacting the wall of the vessel without the anvil simultaneously passing through the wall.

61. (previously added) A method as recited in claim 53, wherein the portion of the anvil contacting the region of the wall of the receiving vessel is convex.

62. (previously added) A method as recited in claim 53, wherein the component extending from the anvil is a piercing wire.

63. (previously added) A method as recited in claim 53, wherein the component extending from the anvil is a positioning stem.

64. (previously added) A method as recited in claim 53, wherein joining a graft vessel to the side of the receiving vessel at the anastomosis site is achieved by driving staples through the graft vessel and the receiving vessel and against the anvil.

65. (previously added) A method as recited in claim 64, wherein the staples are driven such that a first staple is driven against the anvil and a second staple is simultaneously driven against the anvil directly opposite from the first staple.

66. (previously added) A method as recited in claim 53, wherein the anvil is removed via an opening used to achieve the introduction of the anvil into the receiving vessel.

67. (previously added) A method as recited in claim 53, wherein the receiving vessel is a blood vessel, and wherein the anastomosis opening is formed without substantially blocking blood flow through the receiving vessel.

68. (previously added) A method as recited in claim 53, wherein the anvil is positioned at the anastomosis site while the receiving vessel remains pressurized, wherein the anvil enables the receiving vessel to remain pressurized as the graft vessel

is joined to the side of the receiving vessel and as the opening is formed in the receiving vessel at the anastomosis site.

69. (amended) A method for anastomosis of a graft vessel to a side of a receiving vessel, the method comprising:

positioning an anvil within a lumen of a receiving vessel at an anastomosis site of the receiving vessel, wherein the anastomosis site is located at a side of the receiving vessel, wherein a component extends from the anvil, and wherein the component extends through the wall of the receiving vessel,

holding a portion of the wall of the receiving vessel at the anastomosis site between the anvil and a component of an extravascular device to isolate a region of the wall and to stretch at least part of the isolated region prior to forming an anastomosis opening, wherein the component of the extravascular device is positioned outside of a graft vessel lumen,

joining a graft vessel to the side of the receiving vessel at the anastomosis site,

cutting the wall of the receiving vessel to form an anastomosis opening in the side of the receiving vessel at the anastomosis site, and

removing the anvil from the anastomosis site after the graft vessel has been joined to the side of the receiving vessel and the opening has been formed in the receiving vessel.

wherein the receiving vessel is a blood vessel, and wherein the anastomosis opening is formed without requiring interruption of blood flow through the receiving vessel at the anastomosis site.

70. (previously added) A method as recited in claim 69, wherein the anastomosis opening in the wall of the receiving vessel is formed after the graft vessel and the receiving vessel are joined together.

71. (previously added) A method as recited in claim 69, wherein the anastomosis opening in the wall of the receiving vessel is formed before the graft vessel and the receiving vessel are joined together.

72. (previously added) A method as recited in claim 69, wherein cutting the wall of the receiving vessel to form an anastomosis opening occurs simultaneously with joining a graft vessel to the side of the receiving vessel at the anastomosis site.

73. (previously added) A method as recited in claim 69, wherein at least part of the isolated region of the wall of the receiving vessel at the anastomosis site is caused to stretch by forcing a portion of the anvil against the wall of the receiving vessel.

74. (previously added) A method as recited in claim 69, wherein the stretched part of the isolated region extends into an opening of the component of the

extravascular device prior to forming the anastomosis opening in the side of the receiving vessel at the anastomosis site and remains in the opening of the component of the extravascular device as the graft vessel is joined to the side of the receiving vessel.

75. (previously added) A method as recited in claim 69, wherein the stretched part of the isolated region is drawn into the lumen of the graft vessel prior to joining the graft vessel to the side of the receiving vessel and prior to cutting the wall of the receiving vessel to form an anastomosis opening in the side of the receiving vessel at the anastomosis site, and wherein the part remains in the lumen as the graft vessel is joined to the side the receiving vessel.

76. (previously added) A method as recited in claim 69, wherein the component extending from the anvil extends through the wall of the receiving vessel, before forming the anastomosis opening, in a configuration which permits the isolated region of the wall to be stretched without the anvil simultaneously passing through the isolated region of the wall.

77. (previously added) A method as recited in claim 69, wherein a portion of the anvil contacts the wall of the receiving vessel to stretch at least part of the isolated region of the wall of the receiving vessel, wherein the portion of the anvil is convex.

78. (previously added) A method as recited in claim 69, wherein the component extending from the anvil is a piercing wire.

79. (previously added) A method as recited in claim 69, wherein the component extending from the anvil is a positioning stem.

80. (previously added) A method as recited in claim 69, wherein joining a graft vessel to the side of the receiving vessel at the anastomosis site is achieved by driving staples through the graft vessel and the receiving vessel and against the anvil.

81. (previously added) A method as recited in claim 83, wherein the staples are driven such that a first staple is driven against the anvil and a second staple is simultaneously driven against the anvil directly opposite from the first staple.

82. (previously added) A method as recited in claim 69, wherein the anvil is removed via an opening used to achieve the introduction of the anvil into the receiving vessel.

83. (cancelled) A method as recited in claim 69, wherein the receiving vessel is a blood vessel, and wherein the anastomosis opening is formed without substantially blocking blood flow through the receiving vessel.

84. (previously added) A method as recited in claim 69, wherein the anvil is positioned at the anastomosis site while the receiving vessel remains pressurized,

wherein the anvil enables the receiving vessel to remain pressurized as the graft vessel is joined to the side of the receiving vessel and as the opening is formed in the receiving vessel at the anastomosis site.

85. (previously added) A method for anastomosis of a graft vessel to a side of a receiving vessel, the method comprising:

positioning an anvil within a lumen of a receiving vessel at an anastomosis site of the receiving vessel, wherein the anastomosis site is located at a side of the receiving vessel,

holding a portion of the wall of the receiving vessel at the anastomosis site and a portion of a wall of a graft vessel between the anvil and a component of an extravascular device while causing at least part of a region of the wall of the receiving vessel to extend into the lumen of the graft vessel, wherein the component of the extravascular device is positioned outside of a graft vessel lumen,

joining a graft vessel to the side of the receiving vessel at the anastomosis site by driving staples through the wall of the graft vessel and through the wall of the receiving vessel while the part of the region of the wall extends into the lumen of the graft vessel, wherein the staples are driven against the anvil,

cutting the wall of the receiving vessel to form an anastomosis opening in the side of the receiving vessel at the anastomosis site, and

removing the anvil from the anastomosis site after the graft vessel has been joined to the side of the receiving vessel and the opening has been formed in the receiving vessel.

86. (previously added) A method as recited in claim 85, wherein the receiving vessel is a blood vessel and the graft vessel is formed from a synthetic material.

87. (previously added) A method as recited in claim 85, wherein the anastomosis opening in the wall of the receiving vessel is formed after the graft vessel and the receiving vessel are joined together.

88. (previously added) A method as recited in claim 85, wherein the anastomosis opening in the wall of the receiving vessel is formed before the graft vessel and the receiving vessel are joined together.

89. (previously added) A method as recited in claim 85, wherein forming an anastomosis opening occurs simultaneously with joining a graft vessel to the side of the receiving vessel at the anastomosis site.

90. (previously added) A method as recited in claim 85, wherein at least part of the isolated region of the wall of the receiving vessel at the anastomosis site is caused to stretch by forcing a portion of the anvil against the wall of the receiving vessel.

91. (previously added) A method as recited in claim 85, wherein the part of the region of the wall of the receiving vessel extending into the lumen of the graft vessel also extends into an opening of the component of the extravascular device prior to forming the anastomosis opening and remains in the opening of the component of the extravascular device as the graft vessel is joined to the side of the receiving vessel.

92. (previously added) A method as recited in claim 85, wherein the component extending from the anvil extends through the wall of the receiving vessel, before forming the anastomosis opening, in a configuration which permits the region of the wall to be caused to conform to the shape of a portion of the anvil contacting the wall of the vessel without the anvil simultaneously passing through the wall.

93. (previously added) A method as recited in claim 85, wherein a convex portion of the anvil contacts the region of the wall of the receiving vessel.

94. (previously added) A method as recited in claim 85, wherein the component extending from the anvil is a piercing wire.

95. (previously added) A method as recited in claim 85, wherein the component extending from the anvil is a positioning stem.

96. (previously added) A method as recited in claim 85, wherein the anvil is removed via an opening used to achieve the introduction of the anvil into the receiving vessel.

97. (previously added) A method as recited in claim 85, wherein the staples are driven such that a first staple is driven against the anvil and a second staple is simultaneously driven against the anvil directly opposite from the first staple.

98. (previously added) A method as recited in claim 85, wherein the staples are driven in a direction which is substantially perpendicular to a plane passing through a central axis of the lumen of the graft vessel at the anastomosis site.

99. (previously added) A method as recited in claim 85, wherein the receiving vessel is a blood vessel, and wherein the anastomosis opening is formed without substantially blocking blood flow through the receiving vessel.

100. (previously added) A method as recited in claim 85, wherein the anvil is positioned at the anastomosis site while the receiving ed, wherein the anvil enables the receiving vessel to remain ssel is joined to the side of the receiving vessel and as the op ving vessel at the anastomosis site.

80

101. (new) A method for anastomosis of an open end of a graft vessel to a side of a receiving vessel, the method comprising:

positioning an anvil within a lumen of a receiving vessel at an anastomosis site of the receiving vessel, wherein the anastomosis site is located at a side of the receiving vessel,

manipulating the anvil via a component extending from the anvil to cause a region of a wall of the receiving vessel at the anastomosis site to stretch and to conform to the shape of a portion of the anvil contacting the wall of the receiving vessel, wherein the component extends through the wall of the receiving vessel,

joining a graft vessel to the side of the receiving vessel at the anastomosis site,

forming an anastomosis opening in the wall of the receiving vessel at the anastomosis site, wherein the anastomosis opening is distinct from an opening used to achieve the introduction of the anvil into the lumen of the receiving vessel, and

removing the anvil from the anastomosis site, after the graft vessel has been joined to the side of the receiving vessel and the opening has been formed in the receiving vessel,

wherein the receiving vessel remains pressurized as the graft vessel and the receiving vessel are anastomosed together.

102. (new) A method as recited in claim 101, wherein the anastomosis opening in the wall of the receiving vessel is formed after the graft vessel and the receiving vessel are joined together.

103. (new) A method as recited in claim 101, wherein the anastomosis opening in the wall of the receiving vessel is formed before the graft vessel and the receiving vessel are joined together.

104. (new) A method as recited in claim 101, wherein forming the anastomosis opening in the wall of the receiving vessel occurs simultaneously with joining a graft vessel to the side of the receiving vessel at the anastomosis site.

105. (new) A method as recited in claim 101, wherein the region of the wall of the receiving vessel at the anastomosis site stretches and conforms to the shape of the portion of the anvil contacting the wall of the receiving vessel by forcing the portion of the anvil contacting the wall of the receiving vessel against the region of the wall.

106. (new) A method as recited in claim 101, wherein a part of the region of the wall of the receiving vessel caused to stretch and to conform to the shape of the portion of the anvil contacting the wall of the receiving vessel extends into an opening of a component of an extravascular device prior to forming the anastomosis opening and remains in the opening of the component of the extravascular device as the graft vessel is joined to the side of the receiving vessel.

107. (new) A method as recited in claim 101, wherein a part of the region of the wall of the receiving vessel caused to stretch and to conform to the shape of the portion of the anvil contacting the wall of the receiving vessel is drawn into the lumen of the graft vessel prior to joining the graft vessel to the side of the receiving vessel and prior to forming the anastomosis opening, and wherein the part remains in the lumen as the graft vessel is joined to the side of the receiving vessel.

108. (new) A method as recited in claim 101, wherein the component extending from the anvil extends through the wall of the receiving vessel, before forming the anastomosis opening, in a configuration which permits the region of the wall to be caused to stretch and to conform to the shape of a portion of the anvil contacting the wall of the vessel without the anvil simultaneously passing through the wall of the receiving vessel.

109. (new) A method as recited in claim 101, wherein the portion of the anvil contacting the region of the wall of the receiving vessel is convex.

110. (new) A method as recited in claim 101, wherein joining a graft vessel to the side of the receiving vessel at the anastomosis site is achieved by driving staples through the graft vessel and the receiving vessel and against the anvil.

111. (new) A method as recited in claim 101, wherein the anvil is removed via the opening used to achieve the introduction of the anvil into the lumen of the receiving vessel.

112. (new) A method for anastomosis of an open end of a graft vessel to a side of a receiving vessel, the method comprising:

advancing an anvil inside and along a segment of a receiving vessel from an insertion site to an anastomosis site, wherein the anastomosis site is located at a side of the receiving vessel,

manipulating the anvil via a component extending from the anvil to cause a region of a wall of the receiving vessel at the anastomosis site to stretch and to conform to the shape of a portion of the anvil contacting the wall of the receiving vessel, wherein the component extends through the wall of the receiving vessel,

joining a graft vessel to the side of the receiving vessel at the anastomosis site,

forming an anastomosis opening in the wall of the receiving vessel at the anastomosis site, and

removing the anvil from the anastomosis site after the graft vessel has been joined to the side of the receiving vessel and the opening has been formed in the receiving vessel,

wherein the receiving vessel remains pressurized as the graft vessel and the receiving vessel are anastomosed together.

113. (new) A method as recited in claim 112, wherein the anastomosis opening in the wall of the receiving vessel is formed after the graft vessel and the receiving vessel are joined together.

114. (new) A method as recited in claim 112, wherein the anastomosis opening in the wall of the receiving vessel is formed before the graft vessel and the receiving vessel are joined together.

115. (new) A method as recited in claim 112, wherein forming the anastomosis opening in the wall of the receiving vessel occurs simultaneously with joining a graft vessel to the side of the receiving vessel at the anastomosis site.

116. (new) A method as recited in claim 112, wherein the region of the wall of the receiving vessel at the anastomosis site stretches and conforms to the shape of the portion of the anvil contacting the wall of the receiving vessel by forcing the portion of the anvil contacting the wall of the receiving vessel against the region of the wall.

117. (new) A method as recited in claim 112, wherein a part of the region of the wall of the receiving vessel caused to stretch and to conform to the shape of the portion of the anvil contacting the wall of the receiving vessel extends into an opening of a component of an extravascular device prior to forming the anastomosis opening and remains in the opening of a component of the extravascular device as the graft vessel is joined to the side of the receiving vessel.

118. (new) A method as recited in claim 112, wherein a part of the region of the wall of the receiving vessel caused to stretch and to conform to the shape of the portion of the anvil contacting the wall of the receiving vessel is drawn into the lumen of the graft vessel prior to joining the graft vessel to the side of the receiving vessel and prior to forming the anastomosis opening, and wherein the part remains in the lumen as the graft vessel is joined to the side of the receiving vessel.

119. (new) A method as recited in claim 112, wherein the component extending from the anvil extends through the wall of the receiving vessel, before forming the anastomosis opening, in a configuration which permits the region of the wall to be caused to stretch and to conform to the shape of a portion of the anvil contacting the wall of the vessel without the anvil simultaneously passing through the wall of the receiving vessel.

120. (new) A method as recited in claim 112, wherein the portion of the anvil contacting the region of the wall of the receiving vessel is convex.

121. (new) A method as recited in claim 112, wherein joining a graft vessel to the side of the receiving vessel at the anastomosis site is achieved by driving staples through the graft vessel and the receiving vessel and against the anvil.

122. (new) A method as recited in claim 112, wherein the anvil is removed via an opening used to achieve the introduction of the anvil into the receiving vessel.

123. (new) A method for anastomosis of a graft vessel to a side of a receiving vessel, the method comprising:

positioning an anvil within a lumen of a receiving vessel at an anastomosis site of the receiving vessel, wherein the anastomosis site is located at a side of the receiving vessel, wherein a component extends from the anvil, and wherein the component extends through the wall of the receiving vessel,

holding a portion of the wall of the receiving vessel at the anastomosis site between the anvil and a component of an extravascular device to isolate a region of the wall and to stretch at least part of the isolated region prior to forming an anastomosis opening, wherein the component of the extravascular device is positioned outside of a graft vessel lumen,

joining a graft vessel to the side of the receiving vessel at the anastomosis site,

cutting the wall of the receiving vessel to form an anastomosis opening in the side of the receiving vessel at the anastomosis site, and

removing the anvil from the anastomosis site after the graft vessel has been joined to the side of the receiving vessel and the opening has been formed in the receiving vessel,

wherein anvil is positioned at the anastomosis site while the receiving vessel remains pressurized, wherein the anvil enables the receiving vessel to

remain pressurized as the graft vessel is joined to the side of the receiving vessel and as the opening is formed in the receiving vessel at the anastomosis site.

124. (new) A method as recited in claim 123, wherein the anastomosis opening in the wall of the receiving vessel is formed after the graft vessel and the receiving vessel are joined together.

125. (new) A method as recited in claim 123, wherein the anastomosis opening in the wall of the receiving vessel is formed before the graft vessel and the receiving vessel are joined together.

126. (new) A method as recited in claim 123, wherein cutting the wall of the receiving vessel to form an anastomosis opening occurs simultaneously with joining a graft vessel to the side of the receiving vessel at the anastomosis site.

127. (new) A method as recited in claim 123, wherein at least part of the isolated region of the wall of the receiving vessel at the anastomosis site is caused to stretch by forcing a portion of the anvil against the wall of the receiving vessel.

128. (new) A method as recited in claim 123, wherein the stretched part of the isolated region extends into an opening of the component of the extravascular device prior to forming the anastomosis opening in the side of the receiving vessel at the

anastomosis site and remains in the opening of the component of the extravascular device as the graft vessel is joined to the side of the receiving vessel.

129. (new) A method as recited in claim 123, wherein the stretched part of the isolated region is drawn into the lumen of the graft vessel prior to joining the graft vessel to the side of the receiving vessel and prior to cutting the wall of the receiving vessel to form an anastomosis opening in the side of the receiving vessel at the anastomosis site, and wherein the part remains in the lumen as the graft vessel is joined to the side the receiving vessel.

130. (new) A method as recited in claim 123, wherein the component extending from the anvil extends through the wall of the receiving vessel, before forming the anastomosis opening, in a configuration which permits the isolated region of the wall to be stretched without the anvil simultaneously passing through the isolated region of the wall.

131. (new) A method as recited in claim 123, wherein a portion of the anvil contacts the wall of the receiving vessel to stretch at least part of the isolated region of the wall of the receiving vessel, wherein the portion of the anvil is convex.

132. (new) A method as recited in claim 123, wherein joining a graft vessel to the side of the receiving vessel at the anastomosis site is achieved by driving staples through the graft vessel and the receiving vessel and against the anvil.

133. (new) A method as recited in claim 123, wherein the anvil is removed via an opening used to achieve the introduction of the anvil into the receiving vessel.

134. (new) A method for anastomosis of an open end of a graft vessel to a side of a receiving vessel, the method comprising:

positioning an anvil within a lumen of a receiving vessel at an anastomosis site of the receiving vessel, wherein the anastomosis site is located at a side of the receiving vessel,

manipulating the anvil via a component extending from the anvil to cause a region of a wall of the receiving vessel at the anastomosis site to stretch and to conform to the shape of a portion of the anvil contacting the wall of the receiving vessel, wherein the component extends through the wall of the receiving vessel,

joining a graft vessel to the side of the receiving vessel at the anastomosis site,

forming an anastomosis opening in the wall of the receiving vessel at the anastomosis site, wherein the anastomosis opening is distinct from an opening used to achieve the introduction of the anvil into the lumen of the receiving vessel, and

removing the anvil from the anastomosis site, after the graft vessel has been joined to the side of the receiving vessel and the opening has been formed in the receiving vessel,

wherein a part of the region of the wall of the receiving vessel caused to stretch and to conform to the shape of the portion of the anvil

contacting the wall of the receiving vessel is drawn into the lumen of the graft vessel prior to joining the graft vessel to the side of the receiving vessel and prior to forming the anastomosis opening, and wherein the part remains in the lumen as the graft vessel is joined to the side of the receiving vessel.

135. (new) A method as recited in claim 134, wherein the anastomosis opening in the wall of the receiving vessel is formed after the graft vessel and the receiving vessel are joined together.

136. (new) A method as recited in claim 134, wherein the anastomosis opening in the wall of the receiving vessel is formed before the graft vessel and the receiving vessel are joined together.

137. (new) A method as recited in claim 134, wherein forming the anastomosis opening in the wall of the receiving vessel occurs simultaneously with joining a graft vessel to the side of the receiving vessel at the anastomosis site.

138. (new) A method as recited in claim 134, wherein the region of the wall of the receiving vessel at the anastomosis site stretches and conforms to the shape of the portion of the anvil contacting the wall of the receiving vessel by forcing the portion of the anvil contacting the wall of the receiving vessel against the region of the wall.

139. (new) A method as recited in claim 134, wherein a part of the region of the wall of the receiving vessel caused to stretch and to conform to the shape of the portion of the anvil contacting the wall of the receiving vessel extends into an opening of a component of an extravascular device prior to forming the anastomosis opening and remains in the opening of the component of the extravascular device as the graft vessel is joined to the side of the receiving vessel.

140. (new) A method as recited in claim 134, wherein the component extending from the anvil extends through the wall of the receiving vessel, before forming the anastomosis opening, in a configuration which permits the region of the wall to be caused to stretch and to conform to the shape of a portion of the anvil contacting the wall of the vessel without the anvil simultaneously passing through the wall of the receiving vessel.

141. (new) A method as recited in claim 134, wherein the portion of the anvil contacting the region of the wall of the receiving vessel is convex.

142. (new) A method as recited in claim 123, wherein joining a graft vessel to the side of the receiving vessel at the anastomosis site is achieved by driving staples through the graft vessel and the receiving vessel and against the anvil.

143. (new) A method as recited in claim 134, wherein the anvil is removed via the opening used to achieve the introduction of the anvil into the lumen of the receiving vessel.

144. (new) A method for anastomosis of an open end of a graft vessel to a side of a receiving vessel, the method comprising:

advancing an anvil inside and along a segment of a receiving vessel from an insertion site to an anastomosis site, wherein the anastomosis site is located at a side of the receiving vessel,

manipulating the anvil via a component extending from the anvil to cause a region of a wall of the receiving vessel at the anastomosis site to stretch and to conform to the shape of a portion of the anvil contacting the wall of the receiving vessel, wherein the component extends through the wall of the receiving vessel,

joining a graft vessel to the side of the receiving vessel at the anastomosis site,

forming an anastomosis opening in the wall of the receiving vessel at the anastomosis site, and

removing the anvil from the anastomosis site after the graft vessel has been joined to the side of the receiving vessel and the opening has been formed in the receiving vessel,

wherein a part of the region of the wall of the receiving vessel caused to stretch and to conform to the shape of the portion of the anvil contacting the wall of the receiving vessel is drawn into the lumen of the graft vessel prior to joining the graft vessel to the side of the receiving vessel and prior to forming the anastomosis opening, and wherein the part

remains in the lumen as the graft vessel is joined to the side of the receiving vessel.

145. (new) A method as recited in claim 144, wherein the anastomosis opening in the wall of the receiving vessel is formed after the graft vessel and the receiving vessel are joined together.

146. (new) A method as recited in claim 144, wherein the anastomosis opening in the wall of the receiving vessel is formed before the graft vessel and the receiving vessel are joined together.

147. (new) A method as recited in claim 144, wherein forming the anastomosis opening in the wall of the receiving vessel occurs simultaneously with joining a graft vessel to the side of the receiving vessel at the anastomosis site.

148. (new) A method as recited in claim 144, wherein the region of the wall of the receiving vessel at the anastomosis site stretches and conforms to the shape of the portion of the anvil contacting the wall of the receiving vessel by forcing the portion of the anvil contacting the wall of the receiving vessel against the region of the wall.

149. (new) A method as recited in claim 144, wherein a part of the region of the wall of the receiving vessel caused to stretch and to conform to the shape of the portion of the anvil contacting the wall of the receiving vessel extends into an opening of

a component of an extravascular device prior to forming the anastomosis opening and remains in the opening of a component of the extravascular device as the graft vessel is joined to the side of the receiving vessel.

150. (new) A method as recited in claim 144, wherein the component extending from the anvil extends through the wall of the receiving vessel, before forming the anastomosis opening, in a configuration which permits the region of the wall to be caused to stretch and to conform to the shape of a portion of the anvil contacting the wall of the vessel without the anvil simultaneously passing through the wall of the receiving vessel.

151. (new) A method as recited in claim 144, wherein the portion of the anvil contacting the region of the wall of the receiving vessel is convex.

152. (new) A method as recited in claim 144, wherein joining a graft vessel to the side of the receiving vessel at the anastomosis site is achieved by driving staples through the graft vessel and the receiving vessel and against the anvil.

153. (new) A method as recited in claim 144, wherein the anvil is removed via an opening used to achieve the introduction of the anvil into the receiving vessel.

154. (new) A method for anastomosis of a graft vessel to a side of a receiving vessel, the method comprising:

positioning an anvil within a lumen of a receiving vessel at an anastomosis site of the receiving vessel, wherein the anastomosis site is located at a side of the receiving vessel, wherein a component extends from the anvil, and wherein the component extends through the wall of the receiving vessel,

holding a portion of the wall of the receiving vessel at the anastomosis site between the anvil and a component of an extravascular device to isolate a region of the wall and to stretch at least part of the isolated region prior to forming an anastomosis opening, wherein the component of the extravascular device is positioned outside of a graft vessel lumen,

joining a graft vessel to the side of the receiving vessel at the anastomosis site,

cutting the wall of the receiving vessel to form an anastomosis opening in the side of the receiving vessel at the anastomosis site, and

removing the anvil from the anastomosis site after the graft vessel has been joined to the side of the receiving vessel and the opening has been formed in the receiving vessel,

wherein the stretched part of the isolated region extends into an opening of the component of the extravascular device prior to forming the anastomosis opening in the side of the receiving vessel at the anastomosis site and remains in the opening of the component of the

extravascular device as the graft vessel is joined to the side of the receiving vessel.

155. (new) A method as recited in claim 154, wherein the anastomosis opening in the wall of the receiving vessel is formed after the graft vessel and the receiving vessel are joined together.

156. (new) A method as recited in claim 154, wherein the anastomosis opening in the wall of the receiving vessel is formed before the graft vessel and the receiving vessel are joined together.

157. (new) A method as recited in claim 154, wherein cutting the wall of the receiving vessel to form an anastomosis opening occurs simultaneously with joining a graft vessel to the side of the receiving vessel at the anastomosis site.

158. (new) A method as recited in claim 154, wherein at least part of the isolated region of the wall of the receiving vessel at the anastomosis site is caused to stretch by forcing a portion of the anvil against the wall of the receiving vessel.

159. (new) A method as recited in claim 154, wherein the component extending from the anvil extends through the wall of the receiving vessel, before forming the anastomosis opening, in a configuration which permits the isolated region of the wall to

be stretched without the anvil simultaneously passing through the isolated region of the wall.

160. (new) A method as recited in claim 154, wherein a portion of the anvil contacts the wall of the receiving vessel to stretch at least part of the isolated region of the wall of the receiving vessel, wherein the portion of the anvil is convex.

161. (new) A method as recited in claim 154, wherein joining a graft vessel to the side of the receiving vessel at the anastomosis site is achieved by driving staples through the graft vessel and the receiving vessel and against the anvil.

162. (new) A method as recited in claim 154, wherein the anvil is removed via an opening used to achieve the introduction of the anvil into the receiving vessel.

163. (new) A method for anastomosis of a graft vessel to a side of a receiving vessel, the method comprising:

positioning an anvil within a lumen of a receiving vessel at an anastomosis site of the receiving vessel, wherein the anastomosis site is located at a side of the receiving vessel, wherein a component extends from the anvil, and wherein the component extends through the wall of the receiving vessel,

holding a portion of the wall of the receiving vessel at the anastomosis site between the anvil and a component of an extravascular device to isolate a region of the wall and to stretch at least part of the isolated region prior to forming an anastomosis opening, wherein the component of the extravascular device is positioned outside of a graft vessel lumen,

joining a graft vessel to the side of the receiving vessel at the anastomosis site,

cutting the wall of the receiving vessel to form an anastomosis opening in the side of the receiving vessel at the anastomosis site, and

removing the anvil from the anastomosis site after the graft vessel has been joined to the side of the receiving vessel and the opening has been formed in the receiving vessel,

wherein the stretched part of the isolated region is drawn into the lumen of the graft vessel prior to joining the graft vessel to the side of the receiving vessel and prior to cutting the wall of the receiving vessel to form an anastomosis opening in the side of the receiving vessel at the

anastomosis site, and wherein the part remains in the lumen as the graft vessel is joined to the side the receiving vessel.

164. (new) A method as recited in claim 163, wherein the anastomosis opening in the wall of the receiving vessel is formed after the graft vessel and the receiving vessel are joined together.

165. (new) A method as recited in claim 163, wherein the anastomosis opening in the wall of the receiving vessel is formed before the graft vessel and the receiving vessel are joined together.

166. (new) A method as recited in claim 163, wherein cutting the wall of the receiving vessel to form an anastomosis opening occurs simultaneously with joining a graft vessel to the side of the receiving vessel at the anastomosis site.

167. (new) A method as recited in claim 163, wherein at least part of the isolated region of the wall of the receiving vessel at the anastomosis site is caused to stretch by forcing a portion of the anvil against the wall of the receiving vessel.

168. (new) A method as recited in claim 163, wherein the component extending from the anvil extends through the wall of the receiving vessel, before forming the anastomosis opening, in a configuration which permits the isolated region of the wall to

be stretched without the anvil simultaneously passing through the isolated region of the wall.

169. (new) A method as recited in claim 163, wherein a portion of the anvil contacts the wall of the receiving vessel to stretch at least part of the isolated region of the wall of the receiving vessel, wherein the portion of the anvil is convex.

170. (new) A method as recited in claim 163, wherein joining a graft vessel to the side of the receiving vessel at the anastomosis site is achieved by driving staples through the graft vessel and the receiving vessel and against the anvil.

171. (new) A method as recited in claim 163, wherein the anvil is removed via an opening used to achieve the introduction of the anvil into the receiving vessel.